Subject: Fwd: Fw: Question on Recent Cloud Pres
Date: Tue, 27 May 2014 16:46:09 -0400
From: Boris Bystrov - MX-C <boris.bystrov@gsa.gov>
To: Adam Hughes - M1X <adam.hughes@gsa.gov>
Message-ID: <CAA9kFNhRKzKNcT+bh6L3na8svw3gabE370FUShUyQZ=gKOqi8Q@mail.gmail.com>
MD5: 4f4eecec315c7c90d8c3d93b15518a37
Attachments: RENDA_FOSE_MAY_Final.pptx

Hi Adam, I was going to post this powerpoint slide, please review the blog post below.

Thanks!
Boris

(b) (4)

---------- Forwarded message ----------
From: (b) (6)   (b) (6)
Date: Tue, May 27, 2014 at 4:15 PM
Subject: Fw: Question on Recent Cloud Pres
To: "boris.bystrov@gsa.gov" <boris.bystrov@gsa.gov>

From: (b) (6)   [mailto(b) (6)
Sent: Friday, May 23, 2014 10:09 AM
To: Bystrov, Boris
Subject: FW: Question on Recent Cloud Pres

See attached Boris…Scott is good with us posting

From: Renda, Scott
Sent: Friday, May 23, 2014 10:05 AM
To: (b) (6)
Subject: Re: Question on Recent Cloud Pres

Good call! Yes!

From: (b) (6)   )
Sent: Friday, May 23, 2014 09:42 AM Eastern Standard Time
To: Renda, Scott
Subject: Question on Recent Cloud Pres

Scott – I was wondering if you would like to post your most recent Cloud
Presentation at Fose on the CIO Council Knowledge Portal….might be nice! ☺

(b) (6)

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(b) (6)

Cloud Computing
One Cloud Does Not Fit All: Adopting a Secure Cloud for Government

Scott Renda
Office of E-Government and Information Technology
Office of Management and Budget

May 13, 2014

Global Cloud Trends

- Amazon web services projected value of $50B by 2015[1]

- Spending on public cloud services to grow nearly 20% in 2014 to $158B[2]

- Public cloud spending to reach $244B by 2017[3]; 23.5% CAGR[4]

- Cloud growth is led by IaaS and PaaS segments (at annual growth rates of 45% and 33%, respectively)[5]

- By 2017 the top 6 PaaS platforms will host 80% of new cloud all apps[6]

- Cloud growth ~ 14M jobs worldwide by 2015/1M+ in the U.S.[7]

[1] Evercore Partners.
[2][3] Gartner.
[4][7] IDC.
[5][6] R. Jennings, Techtarget.com.

Rapidly Changing Cloud Market

- HP and Cisco – Investing over $1B over the next 2 years to develop and offer cloud computing products and services

- Microsoft – Bought high-performance cloud computing company GreenButton, a US and New Zealand-based HPC company

- Google – Announced massive price drops for its cloud computing services and storage
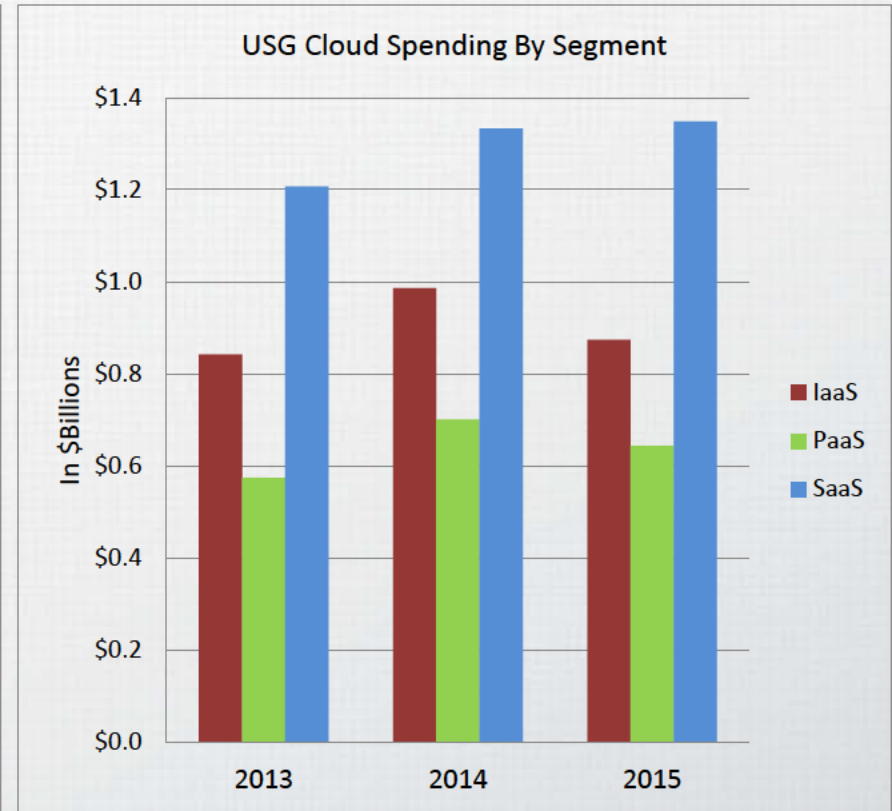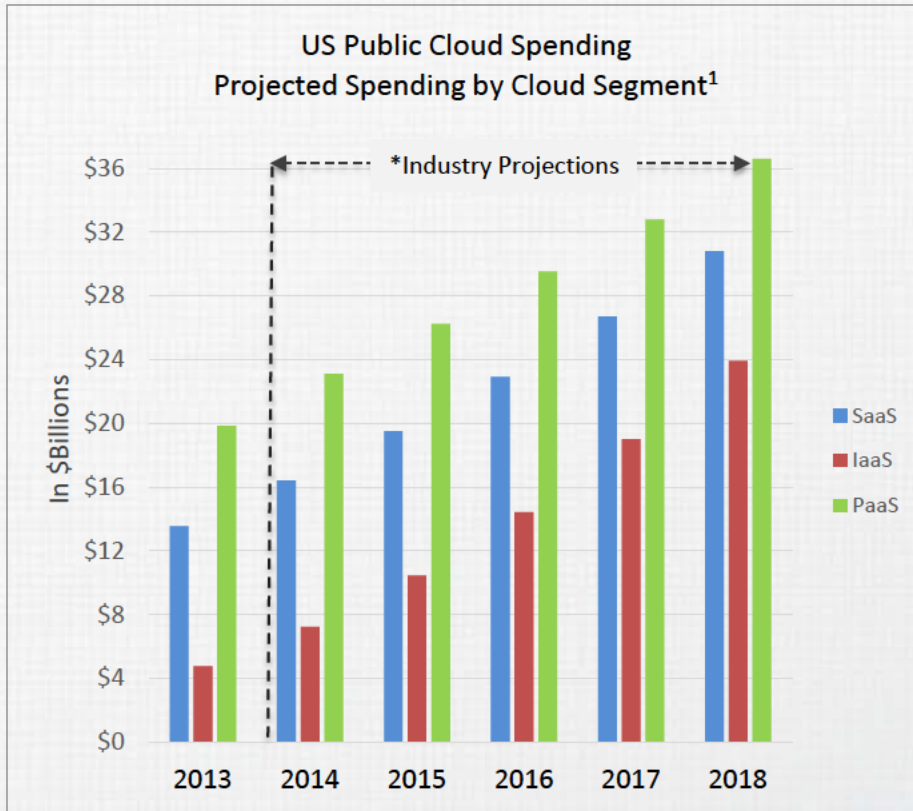
"Cloud First"

Shift from Asset Ownership to Service Provisioning

- Default to cloud-based solutions whenever a secure, reliable, cost-effective cloud option exists

- Continually evaluate cloud solutions across IT portfolios, regardless of investment type or lifecycle stage

- Agnostic on deployment model or service delivery type

- Address how cloud drives business/mission needs first

Cloud Spending Trends

US Public Cloud Spending
Projected Spending by Cloud Segment[1]

In $Billions

*Industry Projections

Legend: SaaS, IaaS, PaaS

Years: 2013, 2014, 2015, 2016, 2017, 2018

USG Cloud Spending By Segment

In $Billions

Legend: IaaS, PaaS, SaaS

Years: 2013, 2014, 2015

- Projected Industry 5-Year CAGR for US public cloud growth shows the highest growth in the IaaS segment [38% for IaaS; 18% for SaaS; 13% for PaaS]

- USG agency cloud spending to date (and for FY 2015) has been highest in the SaaS segment

[1] Source: Gartner

USG Cloud Trends, Cont.

Cloud Service Model

Cloud Service Model %

Cloud Deployment Model

Cloud Deployment Model %
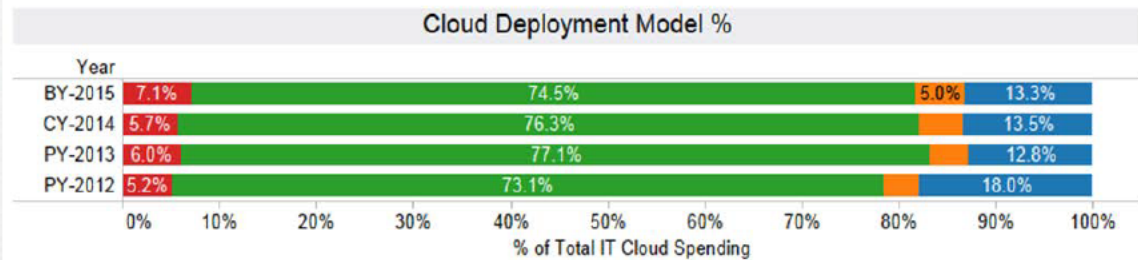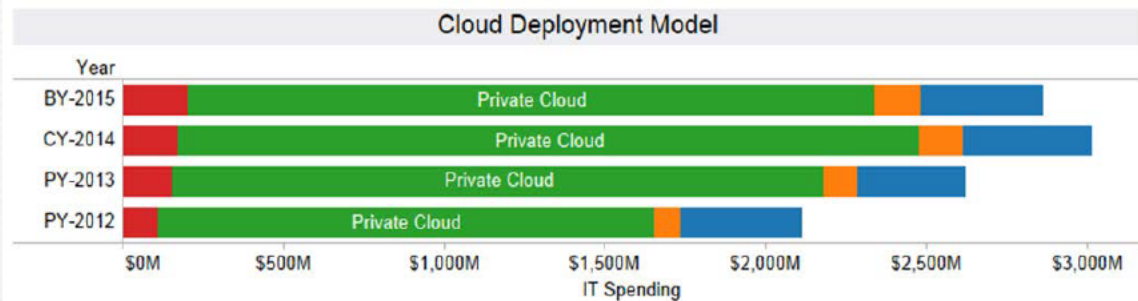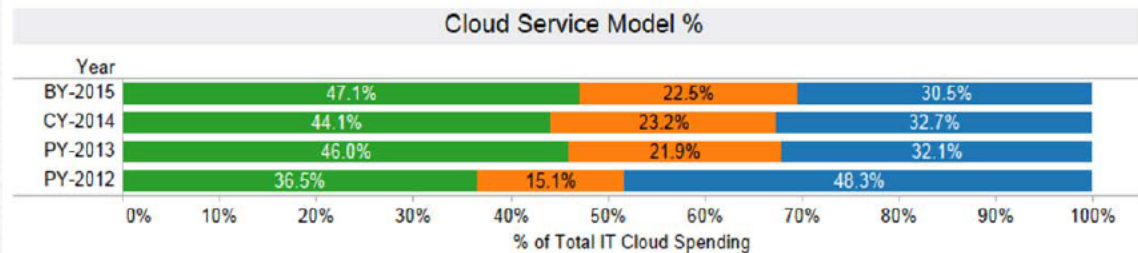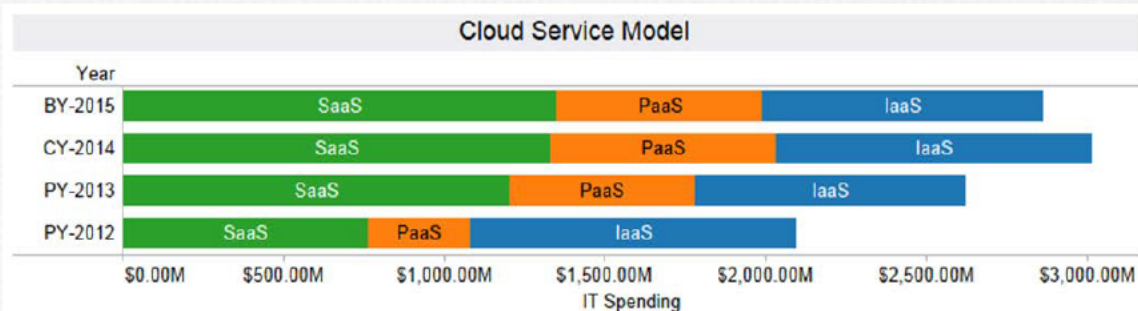
- Total Cloud Budget for BY 2015 is $3B (<5% Total IT Budget for 2015)

- About 75% of agency cloud spending is for private clouds

- Hybrid clouds represent only 5% of cloud spending

- Nearly half of all cloud services provided by agencies is for SaaS

Drivers of Cloud Adoption
Data, Data, and More Data

- Big Data
  - 30% growth in spending on technology and services in 2014 (IDC)
  - "Data-optimized cloud platforms" are on the rise
- Social Networks
  - Commoditization (standard offerings from CSPs)
  - 60% of Fortune 500 considering deployment of social-enabled solutions by 2016 (IDC)
- Mobile Apps
  - Driving PaaS adoption
  - By 2017 ~ 50% of mobile app development will use cloud (Gartner)
- Data Centers
  - Continued growth in cloud-dedicated data centers
  - Software defined everything

Cloud Adoption Trends[1]

- Over 45% of organizations consider themselves to be beyond the pilot phase

- 32% of organizations indicate they have developed formal cloud computing plans as part of their overall IT and business strategy

- 24% percent consider their enterprises to be "heavy" cloud users at this time

- Only 6% of organizations said cloud was the "default platform" for new applications. Only 18% of the enterprises said they rely "heavily" on cloud for new projects

- 39% of executives surveyed expect their enterprise's application portfolio will be touching the cloud by 2015

[1] Hosting and Cloud Study 2014: Hosting and Cloud Go Mainstream, Survey conducted of 2,041 executives across the globe by 451 Research, released by Microsoft, March 2014.

Cloud Mythbusting

Perception	Reality
Cloud is all about lower total cost of ownership (TCO)	Cloud benefits are numerous – innovation, collaboration, new service creation, costs savings, sustainability, et al
Running mission critical applications in the cloud is not safe and secure	FedRAMP provides a standardized way to safely and securely buy cloud
You lose control of your data in the cloud	Cloud require consumers to approach contract management differently, however, no reason not to own your data
Cloud = virtualization	Virtualization is an enabler of cloud, not cloud in of itself
Everything works better in the cloud	Business processes are key to maximizing cloud benefit

What is FedRAMP?

A Government-wide program that provides a standardized approach to security assessment, authorization, and continuous monitoring for cloud products and services

- This approach uses a "do once, use many times" framework that will save cost, time, and staff required to conduct redundant agency security assessments

Cloud Planning
Key Considerations

- Factors to consider in cloud type, and deciding on what to send to the cloud:

    — Cost

    — Platform maturity

    — Volume of data or network bandwidth requirements

    — Connectivity and availability

    — Public CSP's support

    — Security

Going Private?
Trends May be Deceiving

- Industry data[1] showing private cloud heavily outpacing public cloud is more a question of definition than actual adoption trends

- Enhanced virtualization environments have often been mislabeled as private clouds[2]

- Over 90% of private clouds are still believed to be falling short of the core requirements[3]

- Vast majority of dollars spent on IaaS is influenced by developers, and not necessarily by IT operations[4]

[1][2][3] Forrester survey, Adoption Profile: Private Cloud In North America, Q3 2013.
[4] Lydia Leong, Gartner, *"Cloud Pundit: Massive Scale Computing"*, November 2013.
[5] Amazon Web Services.

Benefits of Hybrid Clouds

- Financial considerations – Can help with "auto-scaling" and avoid large cash outlays to acquire new assets that are not needed for continual use

- Logical – may be the best "starting point" for what approach to pursue

- Leverage – public cloud component can be used for disaster recovery and COOP capabilities

- Load balancing – ability to move workloads from private to public cloud and back again as needed

- Scalability – can use computing resources to react faster than normally in a "fixed" private cloud or traditional data center environment (e.g., pay-as-you-go models)

- Testing – facilitates IPv6 testing for critical customer-facing apps (public cloud front end talks IPv6 while the private cloud back-end communicates via IPv4) without costly changes to infrastructure

Cloud PaaS
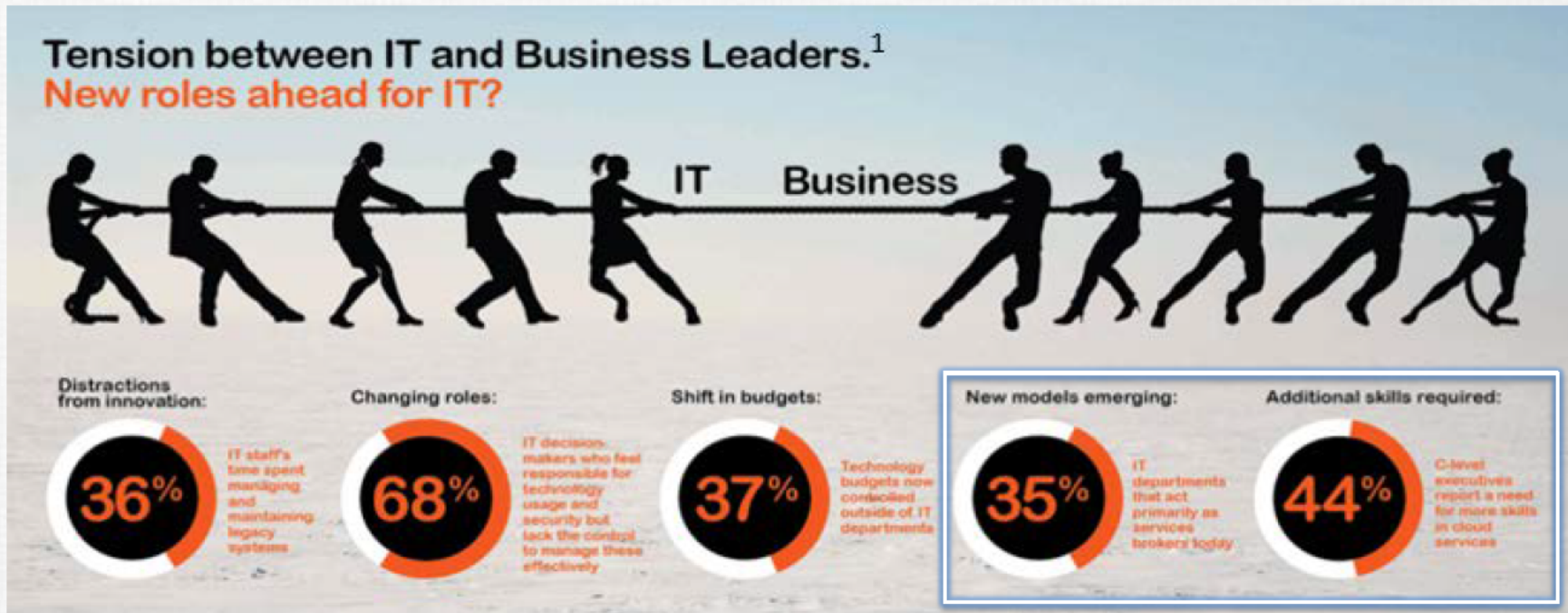## Growth Driven by Mobile, Open data, and APIs

- Recent policies:
  - Executive Order, Making Open and Machine Readable the New Default for Government Information[1]
  - OMB M-13-13, Open Data Policy-Managing Information as an Asset[2]

- Making information resources accessible, discoverable, and usable by the public…Data.gov[3]:
  - 88K agency data sets available
  - 409 web APIs released
  - 140 mobile apps released

- Web Application Programming Interfaces (APIs) are increasing the demand for Cloud PaaS:
  - Standardized and predictable platforms
  - Allows for broader use of cloud platforms across the enterprise
  - Quickly scale to accommodate unpredictable demand

Cloud Impact on Role of CIO

Tension between IT and Business Leaders.[1]
New roles ahead for IT?

IT   Business

Distractions from innovation:
36%
IT staff's time spent managing and maintaining legacy systems

Changing roles:
68%
IT decision makers who feel responsible for technology usage and security but lack the control to manage these effectively

Shift in budgets:
37%
Technology budgets now controlled outside of IT departments

New models emerging:
35%
IT departments that act primarily as services brokers today

Additional skills required:
44%
C-level executives report a need for more skills in cloud services

- Cloud Services Broker - Over 1/3 of IT organizations act primarily as services brokers, and data shows this trend is expected to grow rapidly[1]

- Recent poll of industry CIOs indicates top 3 CSPs SLA metrics:
  — Response time/quality for every end user interaction
  — Availability based on deep, continuous monitoring
  — Real-time SLA reporting

[1]Avanade, survey of over 1000 global business and IT leaders, commissioned February 2014.

Cloud Ecosystem in 2020
∞as a Service

- New generation of CIOs

- "Partner Maps" will replace traditional IT infrastructure diagrams

- Greater proliferation and use of modular software

- Server, storage, and switch provisioning will move out of the hands of developers and become automated

- Low-power processors will be everywhere

- Data centers will become cloud "ecosystems" with super fast interconnects

- Marketplace characterized by more specialized clouds